$HC+NO_X$ is the FEL (or the sum of the cycle-weighted emission rates) for hydrocarbons and oxides of nitrogen in g/km.

(ii) If the vehicle has HC + NO_X emissions greater than 2.0 g/km, use the following equation:

$$NER = 5.000 \times \log(HC+NO_X) + 3.495$$

Where:

$HC+NO_X$ is the FEL (or the sum of the cycle-weighted emission rates) for hydrocarbons and oxides of nitrogen in g/km.

(2) For off-highway motorcycles certified to the standards in §1051.615(b), use the following equation:

$$NER = 8.782 \times \log(HC+NO_X) - 5.598$$

Where:

$HC+NO_X$ is the FEL (or the sum of the cycle-weighted emission rates) for hydrocarbons and oxides of nitrogen in g/kW-hr.

(c) For ATVs, use the following equations:

(1) For ATVs certified to the standards in §1051.107, use one of the equations specified below.

(i) If the vehicle has HC + NO_X emissions less than or equal to 1.5 g/km, use the following equation:

$$NER = 3.333 \times (HC+NO_X)$$

Where:

$HC+NO_X$ is the FEL (or the sum of the cycle-weighted emission rates) for hydrocarbons and oxides of nitrogen in g/km.

(ii) If the vehicle has HC + NO_X emissions greater than 1.5 g/km, use the following equation:

$$NER = 4.444 \times \log(HC+NO_X) + 4.217$$

Where:

$HC+NO_X$ is the FEL (or the sum of the cycle-weighted emission rates) for hydrocarbons and oxides of nitrogen in g/km.

(2) For ATVs certified to the standards in §1051.615(a), use the following equation:

$$NER = 8.782 \times \log(HC + NO_X) - 7.277$$

Where:

$HC+NO_X$ is the FEL (or the sum of the cycle-weighted emission rates) for hydrocarbons and oxides of nitrogen in g/kW-hr.

[70 FR 40491, July 13, 2005, as amended at 73 FR 59246, Oct. 8, 2008]

§1051.140 What is my vehicle's maximum engine power and displacement?

This section describes how to quantify your vehicle's maximum engine power and displacement for the purposes of this part.

(a) An engine configuration's maximum engine power is the maximum brake power point on the nominal power curve for the engine configuration, as defined in this section. Round the power value to the nearest 0.5 kilowatts. The nominal power curve of an engine configuration is the relationship between maximum available engine brake power and engine speed for an engine, using the mapping procedures of 40 CFR part 1065, based on the manufacturer's design and production specifications for the engine. This information may also be expressed by a torque curve that relates maximum available engine torque with engine speed.

(b) An engine configuration's displacement is the intended swept volume of the engine rounded to the nearest cubic centimeter. The swept volume of the engine is the product of the internal cross-section area of the cylinders, the stroke length, and the number of cylinders. For example, for a one-cylinder engine with a circular cylinder having an internal diameter of 6.00 cm and a 6.25 cm stroke length, the rounded displacement would be: $(1) \times (6.00/2)^2 \times (\pi) \times (6.25) = 177$ cc. Calculate the engine's intended swept volume from the design specifications for the cylinders using enough significant figures to allow determination of the displacement to the nearest 0.1 cc.

(c) The nominal power curve and intended swept volume must be within the range of the actual power curves and swept volumes of production engines considering normal production variability. If after production begins it is determined that either your nominal power curve or your intended swept volume does not represent production engines, we may require you to amend your application for certification under §1051.225.

[73 FR 59247, Oct. 8, 2008]